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## LECTURES.

BOSTON CITY HOSPITAL: CLINICAL LECTURE NO. V.

BY DAVID W. CHEEVER, M. D.,

*Professor of Clinical Surgery in Harvard University.*

*Naso-Pharyngeal Polypus removed by Sawing down and Depressing the Nose.* — GENTLEMEN: The rare and interesting case I now bring before you is a boy, fifteen years of age. Symptoms of obstruction of the right nostril and pharynx have been present over a year. Eight months previously a pear-shaped fibroid polypus was removed by Dr. Mason, of Providence, by means of a looped ligature passed through the nose. The tumor soon reappeared. It can now be seen hanging down behind the soft palate. It nearly fills the pharynx, and the right nostril is obstructed. I have decided to attempt its removal by Ollier's operation, in preference to either Langenbeck's operation or my own, which is done by displacing the jaw.

*Operation.* The patient was etherized. Starting at the root of the nose, over the frontal bone, midway between the eyes, an incision was made downward and outward by the side of the nose to the alar cartilage. A similar cut was made on the other side, both incisions reaching the bone. The blade of a small, straight saw was then laid flat on the forehead, and the nasal bones and vomer were sawed through down to the alar cartilages. The nose was now easily upset, and turned down upon the mouth. Next, the vomer was broken and bent by the finger over to the left side, and the inferior turbinated bone was cut away with bone forceps. There was now room enough in the left side of the nares to reach the tumor with the finger. It was found to be attached by a broad root to the bodies of the sphenoid and the right palate bones. It was scraped off the bones by the periosteum scraper. Aided by the finger in the mouth it was delivered whole, and proved to be an oval fibroid, as large as a pullet's egg. The surface from which it grew was touched with nitric acid.

The nose was now replaced, and the nasal bones were wired to the face by two wire sutures; the skin being carefully readjusted with one wire and seven silk sutures. It fitted perfectly. The nose was still farther supported by a horizontal strip of adhesive plaster.

*Subsequent History.* November 3d, day following operation, comfortable. Nose warm. General temperature  $99^{\circ} 4'$ .

November 4th. No pain. Nose warm.

November 7th. Four external sutures cut. Slight discharge around wires. Drops of perspiration on nose.

November 8th. Remaining skin sutures removed. Wound nearly healed.

November 12th. Deep wires removed. Fair union of nose; can be shaken easily, but adheres in position. Very little discharge.

November 15th. Up and about. Scarcely any discharge. No deformity.

November 20th. No discharge. Excellent result. Nose straight and perfect. Two linear scars on either side. Nares and throat clear and well. Voice normal.

November 26th. Patient was discharged, well.<sup>1</sup>

*Abscess under the Scalp.* — The appearance of this boy is peculiar; his face has an unusual expression; the eyes are puffy and red; the cheeks are œdematous; the forehead has an unnatural contour, is oval, prominent, and also œdematous. There are nowhere any marks of a blow, but over the left eye is an old sore from which pus is exuding. Of this case we have the following history: Four weeks ago, while playing, the boy fell and received a violent blow which caused a wound on the forehead. He has since kept about, sometimes feeling sick, but on the whole, until within a few days, has been free from discomfort. Three days ago he was admitted to the hospital. At that time his condition was not so marked as it is to-day. We found that the blow had cut through the scalp and produced a swelling. The question was as to whether the patient had erysipelas, which so commonly follows blows on the face, or whether there were a fluid under the fascia. There are none of the vesications and bullæ of erysipelas; the evidence is in favor of an abscess beneath the scalp. Pent up under the occipitofrontalis fascia is a certain quantity of pus, and the bone is denuded of the pericranium. When the scalp is cut through, the external table of the skull may become affected, and if it die from the effect of the injury the morbid process may extend through the veins of the diploë to the inner table. This is especially apt to happen in children because of the thinness and vascularity of the skull at that age. If the inner table become diseased we necessarily have meningitis, because the dura mater is the inner periosteum of the cranium, and clings to it closely. If we have meningitis, it alone, by irritation and serous effusion, may cause death. Or, we may have abscess of the brain followed by coma, convulsions,

<sup>1</sup> A previous case operated on by Dr. Cheever in 1867-68 is detailed in the First Medical and Surgical Report, Boston City Hospital, 1870. For description of Ollier's own cases, see his work, *Traité de la Régénération des Os*, par L. Ollier, chirurgien en chef de l'Hôtel Dieu de Lyon. Paris, 1867.

and death. These progressive consequences of a blow on the head in children should make us extremely careful as to treatment and prognosis. We must not forget that dreams, restlessness, and headache indicate an approaching affection of the brain. The important point in the treatment of this case is an early and free incision. If that is not made there will be exfoliation of the outer table of bone. If the inflammation go no deeper the patient will probably escape a worse trouble. I have seen a case of exfoliation of the outer table of nearly the whole parietal bone, followed by a granulating surface, the inner table not being affected.

I introduce my probe, and it goes down to rough bone. By curving the instrument I can push it under the fascia, upward toward the hair and downward toward the nose, showing that the swelling includes one third of the forehead. The great essential in the present treatment of the case is to let out the confined pus by free incisions, and so give the bone a chance to exfoliate and repair.

Then, a patient of the age of this boy should be well nourished, yet not too generously. The bowels should be kept freely open; this is an important point. To quiet the brain we should not give opium, which is a medicine ill adapted to head injuries, but rather the bromides, valerian, etc. The sore will be treated with the soda and laudanum wash. Poultices would be improper.

I have now made a crucial incision, and shall cut as far as the limit of denudation of the bone. The abscess seems to extend rather more toward the hair, from which direction you see the pus flowing in a mass. There is also pus toward the orbit, and plenty of it. I find the bone distinctly roughened, as if worm-eaten, and the scalp is thickened. In these cases we should not mind the shape of our incision; the necessity is to let out *all* the pus.

The scalp is vascular because inflamed, and the pus exudes from various deposits. Over the bone, as you will observe, there is no periosteum. If the patient survive we shall eventually have exfoliation of the outer plate of the frontal bone.

This is as practical and important a case as we could see. Especially so because we meet such in every-day practice. It is one of the cases which may end in meningitis, abscess, and death, or which may run into epilepsy and other kindred lesions. [This child died of meningitis the following week.]

*Anal Fissures.* — Our next patient has an affection of the rectum. He is already under the influence of ether, but is not breathing freely. When the head of an etherized patient is allowed to fall too low, you will invariably find that trouble begins. The tongue naturally gravitates backward because the patient has no muscular control over it. Whenever this happens stertorous breathing will at once be heard. It

will then be necessary simply to raise the patient's head. The tongue comes forward, and respiration again becomes easy. There is another condition in which an etherized patient becomes tetanic. He has opisthotonos, draws himself forcibly and convulsively backward, and his movements are spasmodic. In such a case the need is air, and the ether should be withdrawn. If he throw himself back with great force, turn him on his side, and the condition will pass off. Our patient is nauseated. After he has vomited he will go to sleep easily. He is a laboring man, and says he cannot give us more than one week in which to treat him. At stool he suffers great pain. Yesterday I hastily examined him, but am not yet fully acquainted with his trouble. What I then saw I see to-day, namely, three or four small fissures, which undoubtedly are the entire cause of his suffering. One of them is healed, and another nearly so; a third is raw and ulcerated. When the anus is stretched in the act of defæcation the fissures reopen and give intense pain, just as do cracks in the corners of the mouth during a meal.

The best treatment for this condition is to stretch the rectum violently in order to paralyze the sphincter muscle, and afterward slightly incise the mucous membrane over the fissures. This combination of stretching and cutting is generally successful in promoting a cure.

Introducing my finger I do not feel anything abnormal within the rectum. It is probable that the trouble is confined to the margin. The method of treatment is to work the two thumbs into the bowel, grasp the tuberosities of the ischia with the fingers, and then rupture the sphincter muscle, as I have now done. The cracks have thus been widened. I now pass an Allingham speculum, and examine higher up. I find nothing but this fissured condition, which is very marked, as I will show you in a moment by thoroughly stretching the rectum. The principal fissure is situated on the posterior wall. I now take the knife and lightly score the membrane, just cutting down to the fissure itself. This I do in several directions. We shall keep the bowels open for a week. Aside from this, merely ordinary care is all that will be necessary.

*Housemaid's Knee.* — This woman has a swelling outside and in front of the knee-joint. The trouble has been going on for months. There is no lameness, but the locality is sore, and the effects have become such that operative treatment is needed. The knee-joint, on either side, as you will notice, is natural in shape and free from all trouble. The lesion is outside the joint and over the patella. There are two swellings, one above the other. The upper is distinct and hard. The lower is discolored, open, and suppurating. We have here a swelled bursa, constituting what is known as "housemaid's knee," but we seldom see so bad a case as this. The bursa first becomes irritated; then its walls thicken, an abscess forms, the part ruptures, suppurates, and

sloughs. This is the progressive history of the affection. When seen early the bursa may be tapped, laid open with the knife, iodine may be injected, or it may be treated by the seton. The latter course is an imitation of what nature is trying to do here, namely, heal by suppuration and granulation, and should be the last of all the methods of cure to be attempted, the trouble here being that the tough wall of the sac is left behind. Our treatment, then, is to try to dissect out this tough membrane, and so leave a clean cavity. The probe, as you see, passes in various directions. It is quite possible that the upper swelling is an independent cyst, which is going through the same stages as the lower. In fact, I find no connection between the two, and will first operate on the upper cyst. The best way is to incise straight through, — thus. I find it a thick, hard mass, with but a small cavity. It seems to reach the knee-pan and tendon, and in a great measure has undergone a process of solidification. It is, as I supposed, a separate cyst. In my dissection I have worked down to the tendon, and can see the patella and shiny fascia over it. I have now removed the upper cyst, and you may observe that the cavity is left perfectly clean. In the same manner we must dissect out the lower cyst, which is so rotten and suppurating as to be not nearly so clean as the other. I am now down on healthy tendon, and the operation is completed.

For after-treatment the point is to manage the wound so as to prevent the extension of inflammation into the joint. For the present we simply strap and dress with water. Sutures would do no good here, for the wound would not heal by first intention. We shall also apply a ham-splint, keep the patient in bed, and dress with the "soda and opium wash," which is composed as follows: laudanum one part, liquor sodæ chlorinatæ two parts, water ten parts.

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## TWO CASES OF URÆMIC CONVULSIONS.

BY F. GORDON MORRILL, M. D.

THE following brief notes are published as affording examples of recovery from uræmic symptoms of a violent and persistent type.

CASE I. *Chronic Bright's Disease.* — A woman, aged forty-two, lost consciousness while walking in the street, and was carried to the Carney Hospital December 21, 1873. She had convulsions of left side soon after admission, which lasted nearly half an hour. She then remained in an unconscious state up to the time of my visit, some two hours later, when her condition was as follows: general appearance anæmic; œdema of feet and ankles; pupils widely dilated; pulse 140; respiration rapid; could not be roused.

A catheter was passed, but the bladder was found to be empty. Her

friends stated that she had had an attack similar to the present one some ten months before, and that the œdema had existed only a few weeks previous to the time of her admission. Fifteen grains of calomel were placed upon her tongue, and (as she swallowed liquids when introduced into the mouth) an ounce of acetate of potash was ordered in solution, the patient to be given as much as possible of this amount during the next twenty-four hours.

December 22d. Has been freely purged, and has passed urine, the quantity and quality of which could not be estimated, as it was voided involuntarily upon the bedding. Cold was directed to be applied to her head, and milk and beef tea in such quantities as could be given.

December 23d. Still unconscious, and apparently sinking. Passed large quantities of albuminous urine. P. M. Suddenly started up and became so violent as to require restraint to prevent her biting the attendants.

December 25th. Rational at times. Takes plenty of liquid nourishment.

December 30th. Entirely rational, and strong enough to ride to her home.

CASE II. *Acute Desquamative Nephritis*. — September 5, 1874, a girl, aged seven, presented the usual symptoms of scarlatina, attended with a profuse rash, high temperature, and very rapid pulse. Suppurative inflammation of the internal ear on both sides followed the fading of the eruption, and on the twentieth day after the commencement of the disease albuminuria was present, with slight œdema of the feet and ankles. The latter symptom increased slowly, notwithstanding a copious diuresis produced by the exhibition of infusion of digitalis. (I may remark here that the line between vascular diuretics and those which act upon the kidney was not as strictly defined at the time this case occurred as at present, and that the digitalis was prescribed in accordance with the views of Dickinson.)

October 7th. Sudden loss of consciousness and twitching of the muscles on the left side of face occurred. These symptoms were relieved by the application of cold to the head and the administration of a little brandy. The bowels had moved freely on the previous day, and no diminution of the amount of urine passed had been observed. A wet pack and a drastic purge were ordered; the latter had to be repeated twice before the stomach retained it. In the afternoon the child had violent convulsions, controlled by ether, but recurring whenever its effects passed away. Pupils dilated. Several watery discharges. A tenth of a grain of morphine was directed to be placed upon the tongue every four hours.

This condition of things lasted until the afternoon of the 11th. During the whole of this period (four days) the child was kept under the

influence of the anæsthetic, — any attempt to withdraw it being almost immediately followed by a spasm. The pack and morphine were continued (the pupils remaining dilated), and advantage was taken of the time between the return of semi-consciousness and the recurrence of the convulsions to administer a teaspoonful or two of champagne or of lime-water and milk. Twice during this period no pulsation of the radials could be detected, and respiration apparently ceased. On the night of the 8th, those around thought the child dead, and during a space of four hours nothing was done for her, when a slight quiver of the lips was noticed by one of the attendants, who forced a teaspoonful of brandy between her teeth, which caused the child to revive, only to go into a most violent convulsion. On the afternoon of the 11th, the intervals between the withdrawal of ether and the recurrence of spasms became longer, and towards night the patient sank into a quiet sleep which lasted until noon of the next day, when she awoke and recognized those about her. From this time on she steadily improved. Albumen was found in the urine at every examination until fourteen months had elapsed from the commencement of her illness. After this none was ever detected. The girl is in excellent health at the present time.

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## RECENT PROGRESS IN PHYSIOLOGY.

BY H. P. BOWDITCH, M. D.

*Air in the Circulatory System.* — The various disturbances which may be produced by the mixture of free air or gas with the circulating blood have been carefully studied by Couty<sup>1</sup> in several series of experiments on animals which were usually slightly curarized. His conclusions are that bubbles of air mixed with the arterial blood are an obstacle to the flow through the capillaries which may be estimated at several centimeters of mercury, the obstacle increasing with the amount of air. The rapidity with which blood mixed with air circulates through any organ increases, as in the case of normal blood, with a rise of the general blood tension and with a diminution of local vaso-constrictor activity. The obstacle varies very greatly in different organs. Thus "foamy" blood traverses the capillaries of the limbs and brain much more readily than those of the abdominal viscera, a result the opposite from that which might be expected from the relative size of the capillaries in these organs.

The immediate cause of the dangerous and even fatal consequences of mixing air with the blood seems to be a stoppage of the circulation.

<sup>1</sup> Étude expérimentale sur l'Entrée de l'Air dans les Veines et les Gaz intra-vasculaires. Paris, 1875. Recherches expérimentales sur les Gaz libres intra-artériels, Archives de Physiologie, 1877, page 429.

This stoppage may, according to the author, be brought about in three different ways.

I. By the accumulation of air in the right side of the heart. This accumulation may occur whether the air is introduced by the veins or the arteries, and its effect is in all cases to distend the right side of the heart to two or three times its normal volume, producing mitral insufficiency. The elasticity of the air, which causes it to be compressed instead of driven out by the systole of the right ventricle, and its lightness, which keeps it always in the upper part of the cavities, seem to afford a mechanical explanation of this distention. The distended ventricle contracts less and less completely, and the blood, having a free passage backward through the mitral valve, gradually ceases to circulate.

II. By the direct obstacle to the circulation presented by the air in the capillaries. The stoppage of the circulation thus produced is, of course, more or less localized, and the gravity of the result will depend upon the importance of the organ in which the stoppage occurs. If the lungs are the organs affected, as is commonly the case when air enters the veins, the phenomena of asphyxia will be produced. The paralysis which is so marked a symptom in the so-called "caisson disease" seems to be an affection of this sort, the air set free in the blood by too sudden a "decompression" obstructing the circulation in the nerve centres.<sup>1</sup>

III. By vascular paralysis resulting from prolonged anæmia of the nerve centres. This subject has been studied by the author<sup>2</sup> in a separate series of experiments in which local anæmia was produced by the injection of lycopodium into the blood-vessels supplying the various nerve centres.

The danger resulting from the entrance of air into the veins has recently been made the subject of a clinical lecture by Fischer,<sup>3</sup> to which valuable exposition the reader is referred for the bibliography of the subject. In experiments on rabbits the author found that a free opening into the internal jugular vein in the lower part of the neck always caused sudden death preceded by an audible sound of the entrance of air and by dyspnoea. The same result generally followed the opening of the axillary vein, but not that of the external jugular or femoral veins. The effect was the same whether the animals were anæmic or full-blooded, starving or well fed. Autopsies invariably showed the right side of the heart to be distended and filled with foamy blood, which could also be traced into the finest subdivisions of the pulmonary artery. If the air was allowed to enter slowly but constantly, the same fatal result followed, except in those cases in which only small amounts

<sup>1</sup> See Bert. *Pop. Science Monthly*, xi. 316.

<sup>2</sup> *Archives de Physiologie*, 1876, page 665.

<sup>3</sup> Volkmann's *Sammlung klinischer Vorträge*, No. 113.

were employed, for example, ten to twenty cubic centimeters in half an hour, an observation quite in accordance with our knowledge of the feeble power of the blood to absorb nitrogen. The author discusses the various views which have been held in regard to the cause of death following penetration of air into the blood-vessels, and, in view of the fact that the heart often continues to beat after the occurrence of the most alarming symptoms, is inclined to adopt the opinion of Magendie and Poiseuille, that asphyxia is, in the majority of cases, the immediate cause of death. In regard to the manner in which asphyxia is brought about, the author adopts the theory of Panum, that the air acts like an embolus in the pulmonary artery and interrupts the normal supply of oxygenated blood to the left ventricle.

*Movements of the Vocal Cords.* — The recent application by Oertel<sup>1</sup> of the so-called stroboscopic method of observing rapid vibrations to the study of the movements of the vocal cords seems likely to lead to important additions to our knowledge of the physiology of vocalization. This method, which was first employed by Plateau in 1836, consists in observing a body having a rapid but unknown rate of vibration at intervals which can be regulated to correspond to the unknown rate. This object can be accomplished either by illuminating the vibrating body by a rapid series of electrical sparks, or by looking at it through holes in the edge of a revolving disc, or through a perforated disc attached to a tuning-fork. If the rate of the observations coincides with that of the vibrating body, the latter, being observed always in the same phase of its vibration, presents the appearance, owing to the persistence of the impression on the retina, of a body perfectly at rest. If the rate of the observations is a little slower than that of the vibrating body, the latter, being at each observation in a somewhat more advanced phase of its movement, will appear to execute its vibration at a rate corresponding to the difference between the rates of observation and vibration. Thus a body vibrating two hundred times in a second, seen through a stroboscopic apparatus giving two hundred and one observations in a second, will appear to vibrate once in a second. Thus by knowing the rate of the observations and noting the rate of the apparent stroboscopic movement, the rate of the vibrating body may be determined. It is also possible by this method to study accurately the appearance presented by a vibrating body in every phase of its movement.<sup>2</sup>

The application of this method to the study of the vocal cords requires the use of the most powerful sources of illumination; for example, sunlight, electrical light, or lime light. Oertel's observations, which have as yet been given only in preliminary communications, show that in ordinary chest tones the vocal cords vibrate throughout their whole

<sup>1</sup> Centralblatt für die medicinischen Wissenschaften, 1878, pp. 81 and 99.

<sup>2</sup> See Mach. optisch-akustische Versuche, Prag, 1873.

length and breadth in such a way that the excursions of the various points of the cord increase with their distance from the outer border. In falsetto tones, on the other hand, though the cords vibrate in their whole length and breadth, the vibrating surface presents a curved nodal line, about one third of the distance from the free edge to the attached border, the parts of the cord on opposite sides of the nodal line being of course always in opposite phases of vibration. In very high falsetto tones a second nodal line may be observed, indicating a still further subdivision of the vibrating surface.

Oertel suggests the possibility that this method of research will throw light upon various obscure laryngeal troubles, particularly those affecting singers, dependent probably upon anomalies of vibration and differences of tension of the vocal cords.

*The Telephone as an Instrument of Research.* — Though so short a time has elapsed since the invention of the telephone, it has already found numerous applications as an instrument of physical and physiological research. Goltz<sup>1</sup> has shown that the electrical currents produced in the conducting wires by the different vocal sounds may be used to irritate the motor nerves of the frog, and that contractions of different intensity correspond to the different vowel sounds, *a* and *o* producing the most powerful, and *i* (as in *mien*) the weakest stimulation. The result is the same whether the conducting wires of the telephone are connected directly with the nerve or with the primary coil of an induction apparatus the secondary currents of which furnish the stimulus.

Du Bois-Reymond<sup>2</sup> has made similar observations, and has also given reasons for regarding the telephonic transmission of sounds as an additional argument in favor of the theory of Helmholtz, that the timbre or "clang-tint" of a sound is not altered by a change in the relative position of the component vibrations, causing them to combine in different phases. For he has shown by a mathematical discussion of the conditions under which the transmission occurs that a change of this sort must take place, and yet the sounds are transmitted unaltered in timbre from one telephone to the other.

Hermann<sup>3</sup> has investigated the subject of telephonic transmission by induction, and has found not only that sounds may be transmitted unaltered when one telephone is connected with the primary and the other with the secondary coil of an induction apparatus (or still better with the two parts of a galvanometer coil), but that the result is not interfered with when several other coils are introduced between the hearing

<sup>1</sup> Pfüger's Archiv, xvi. 189.

<sup>2</sup> Verhandlungen der Berliner physiologischen Gesellschaft, November 30, 1877. Archiv für Physiologie, 1877, page 573.

<sup>3</sup> Pfüger's Archiv, xvi. 314.

and the speaking telephone, so that the sounds are produced in the latter by induced currents of the third, fourth, or even fifth order. In view of this fact, Hermann maintains that the law of induction, assumed by Du Bois-Reymond in his above-mentioned calculation, cannot, for some reason or other, be applied to oscillatory changes of intensity, such as are produced by the telephone.

Hermann<sup>1</sup> has also employed the telephone as a means of studying the feeble electrical currents of muscles, and finds that when the longitudinal and transverse sections of a muscle are connected by unpolarizable electrodes with a telephone, and a mechanical interrupter included in the circuit, a noise is heard corresponding to the interruption. That the muscle current is really the cause of the sound is proved by the fact that silence ensues when the electrodes are withdrawn from the muscle and placed in contact with each other. Although the constant current of the muscle at rest is thus readily demonstrated, all attempts to render audible the rapid variations of this current (the "action current" of Hermann) which accompany a tetanic muscular contraction have as yet yielded only negative results. This is the more surprising from the fact that when tested with an ordinary induction apparatus with a vibrating armature and a sliding secondary coil the telephone responds with an audible sound to induced currents of so feeble intensity that they will not stimulate the most sensitive nerve-muscle preparation; yet when the nerve of this preparation is applied to the surface of a tetanically contracting muscle the well-known phenomena of secondary tetanus ensue. It seems, therefore, that the telephone is more sensitive than the frog's nerve to the secondary currents of an induction apparatus, while for the electrical currents which accompany muscular activity the reverse is the case.

To the currents produced by the thermopile Hermann found the telephone very sensitive. If a telephone, a Heidenhain's thermopile, and a mechanical interrupter are included in an electrical circuit (the latter instrument being placed in an adjoining room on account of the noise produced), it is only necessary to bring a finger into the neighborhood of one of the surfaces of the pile to hear a distinct noise. A similar use of the telephone in connection with a thermopile has also been described by Forbes.<sup>2</sup>

Finally, it should be mentioned that the telephone affords a valuable method of testing the vibrating interrupters for electrical currents so commonly used in physiological researches. It is usually assumed that the number of interruptions corresponds to the number of vibrations as determined by the tone of the vibrating spring. The accuracy of this assumption can be readily tested by observing whether a telephone included in the circuit gives the same tone as the interrupter.

<sup>1</sup> Pflüger's Archiv, xiv., page 504.

<sup>2</sup> Nature, February 28, 1878.

It is not yet possible to speak with certainty of the value to the physiologist of that instrument which is so closely allied to the telephone, namely, the *phonograph*, but it is evident that it cannot fail to render important service in the study of vocalization and articulation. For indications of the problems likely to be solved by its aid the reader is referred to the communications of Jenkin and Ewing.<sup>1</sup>

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## PROCEEDINGS OF THE BOSTON SOCIETY FOR MEDICAL OBSERVATION.

O. W. DOE, M. D., SECRETARY.

JANUARY 7, 1878. *Amyloid Degeneration*. — DR. WEBBER reported the following cases: —

CASE I. Patient entered the City Hospital in April, 1877, on account of lung disease, which proved to be phthisis. She had then merely sonorous râles at the end of inspiration, over the left front, and a little irregularity of inspiration under the left clavicle. She was under Dr. Edes's care at that time, and went out in less than a month relieved. She entered again November 1st under Dr. Webber's care, with œdema of the feet, which had been present four or five weeks, and some puffiness of the eyelids. The urine was scanty; there was no headache and no vomiting. The heart sounds were normal, with a strong impulse at the apex, and the second sound accentuated. There were moist râles throughout the upper half of the left chest in front, with dullness on percussion. At the upper part of the left back respiratory sounds were scarcely audible; at the middle third expiratory murmur was as long as inspiratory, and both were harsh. Urine was acid, contained very much albumen; casts were abundant, being hyaline, with highly refracting granules, granular, and waxy; they were both narrow and wide. About eighteen ounces of urine were passed in twenty-four hours. Steam baths, digitalis, and squills were ordered; the urine increased gradually, and on the 17th it amounted to sixty-seven ounces. The digitalis and squills were omitted, and later the steam baths; the urine continued abundant until after December 1st. Nausea and vomiting with diarrhœa appeared about the middle of December, and she died on the 25th.

The kidneys and spleen were amyloid. Under the microscope the tubules were found to be filled with granular and waxy casts. There were very few healthy tubules to be seen, and many of the Malpighian bodies had undergone amyloid degeneration.

CASE II. The patient entered April 16th with chronic Bright's disease. She had an attack of purulent otitis while in the hospital; was discharged at her own request. After she went out she did not feel well, and three weeks before readmission she took cold, had great swelling of feet, urine scanty and red in color. Five months before readmission there was numbness in the left side face, arm, and leg, which disappeared from the face, but persisted in the arm with coldness extending to the shoulder, and prickly sensations in the tips of the fingers. At times there was twitching of the left arm sufficient to keep

<sup>1</sup> Nature, March 14, 1878, and March 28, 1878.

her awake or prevent dressing. While in the hospital she had diarrhoea, which was quite persistent; a bed sore; scanty urine, passing only from three to nine ounces in twenty-four hours, the specific gravity 1007; much albumen; when examined no casts were found, but there was a little blood. There was nothing in the symptoms to call attention to the pelvic organs, or to arouse suspicion of the condition in which these were found; the same may be said of the necrosis of the skull.

*Autopsy.* In the middle of the frontal bone a ragged, eroded spot about one inch in diameter was found, the irregular cavities in the bone being filled with pus; skin not discolored over this; beneath, the dura mater was somewhat reddened, and there were a few drops of pus on its surface as well as on the pia mater. Longitudinal sinus was obliterated for about an inch or an inch and a half. No meningitis over temporal lobe; no phlebitis or thrombosis of lateral sinus on right side. There were no adhesions of the pia mater at vertex or over the frontal region; brain substance normal.

Liver was contracted, furrowed, wrinkled, on section presenting whitish streaks in the vicinity of the depression; lobules of a yellowish-white color, surrounded by red, not amyloid. Kidneys were rather small; on section, lobules indistinctly marked, coming rather near the surface; cortical substance mottled, but mostly of a dirty white color; some amyloid degeneration. Spleen was not amyloid.

Intestines were matted together near the pelvis, and there was a collection of pus on the right side behind the uterus. There was no ulceration. Bladder was thickened and red, and ulcerated at one point where there was a perforation. In the uterus were found four or more fibroids at the upper part, two as large as walnuts,—one in the posterior wall, the other subperitoneal and pediculated.

Dr. Webber showed the kidneys from the two cases given above, and remarked that they were interesting as having occurred under different conditions, the one having necrosis of bone and purulent inflammation, the other phthisis.

*Cerebral Hemorrhage.*—Dr. Webber also reported the following case of cerebral hemorrhage, simulating in some of its features a tumor, with pachymeningitis chronica:—

The patient was a single woman, twenty-four years of age. Was always in poor health. At eight years of age she had "dropsy in the head," with gathering in left ear; discharge continued till twenty years of age. Many scars on forehead caused by falls during the attack of hydrocephalus. Scarlet fever at fifteen. Seven years ago her throat troubled her, and a "yellow cancer" was removed from the front of the neck. At every sickness had alopecia and also severe headache, frontal, right temporal, right parietal, and at the vertex; for last two years a heavy feeling at top of head. Often had cramps in the legs and pain at small of back; also pain in left side.

Last July had severe headache, cramps, and numbness in hands, and once fell to the floor. In August suddenly had numbness with pricking sensations in left finger-nails, proceeding up left arm to head; she could not speak; tongue was numb on left side, as were also the left jaw and cheek. After this the right eye was very red. In October the right eye began to protrude.

In the latter part of November the left arm and hand became paralyzed, and later the left leg. Severe headache all the time. Had a spasm lasting about an hour; was very sick all night; next night worse, with choking spells. Four days before entrance she had a spasm in her throat which threw her into a fit. December 7th there was choking followed by pricking and numbness in both hands and arms and in left leg; hands cramped. First phalanges partially flexed, second and third extended, fingers straight. Spasm ceased in ten or twelve minutes, and she spoke of a ball in her throat. On the 17th the motion had partially returned to the left arm, and this power steadily increased until January 2d when she had considerable use of the left side. She had frequent and severe headache, requiring the use of morphia. During the night of January 2d she had a fit; was quiet, looking upwards; respiration was labored; she cried, "Oh, my head!" respiration had ceased when the house officers reached the bedside.

She had an eruption on both arms; a red base with white pearly scales, the papules arranged in a ring; this slowly extended, leaving a superficial cicatrix; it was most extensive on the right arm. There was itching and formation on the left side, and somewhat on the right.

In consequence of the persistent headache, the repeated attacks of numbness and paralysis, the latter gradually appearing and disappearing, the spasms, the affection of the conjunctiva of the right eye, and the protrusion of the eyeball, Dr. Webber made the diagnosis of tumor cerebri. In consequence of the sore throat, the alopecia, and the skin eruption she was put upon antisyphilitic treatment.

Instead of a tumor there was found multiple hæmorrhage; the large clot, about an inch in diameter, evidently old, may well have caused the symptoms peculiar to a tumor.

*Autopsy.* Lungs, no adhesions; healthy, except a small, consolidated nodule at the apex, and a few calcareous concretions in substance. Heart, a white patch in front on left ventricle at apex; no hard nodules on valves. Liver very much congested, dark, friable. Spleen normal. Kidneys normal. Uterus, lateral flexion to the right; contained a small amount of bloody mucus. Skin very tender, being easily torn through by the stitches.

Head, dura mater thickened in layers, which separated easily in front; no hæmorrhages between the layers; on one side two large osseous plates, on the other one plate. Convolutions on right side over vertex flattened; pia mater tinted yellow, seemingly from the serum beneath. At one point, just above the fissure of Sylvius, was a dark-colored spot about one line in diameter, with a circle outside about four lines wide. A cut accidentally made below the fissure of Sylvius gave exit to considerable serum. Along the fissure of Sylvius, external to the membrane, was a small clot about three fourths of an inch wide; this curled around beneath the anterior lobe; its communication with a large clot in the brain was not found. Considerable blood also in the posterior fossa, mostly fluid.

Pia mater on the left opaque and thickened, convolutions not flattened. On removing brain, in the right anterior fossa a small sac-like membrane was found attached to the dura mater.

On slicing the right cerebral lobe the cerebral substance was found to be deeply tinted yellow; in the anterior lobe just below the central fissure was an old clot, about one inch in diameter. This was confined to the white substance and had a somewhat firm limiting membrane. Just posterior to this was a small clot about half an inch in diameter, and just below and posterior to this another small clot about the same size, but more elongated, both these having a limiting membrane, and not communicating with each other. All were confined to the white substance, just touching the gray. Behind and below these was a fourth clot, larger than the others, which had broken down the posterior extremity of the intraventricular nucleus of the corpus-striatum, had torn up the brain substance, following the descending cornu of ventricle, but had not opened into the lateral ventricle. The brain substance about this was suffused; no limiting membrane. The left side of brain, cerebellum, pons, and medulla healthy. No miliary aneurisms found; blood-vessels did not show disease of eye.

*Sarcoma of the Pancreas, Liver, and Gall-Bladder.* — DR. INGALLS reported the following case of sarcoma of the pancreas, liver, and gall-bladder.

On the 9th of September, 1877, Mrs. — consulted him on account of a prolapse of the womb, and the history of the case in her own words was as follows: "I am fifty-five years old, have had four children; the youngest is twenty-three years old. I had good health up to twelve years ago, when I found that my womb came down lower than it ever did before. I have always been an active, hard-working, housekeeping woman. Have never had back-ache; have been for the most part constipated during these twelve years. Continued to work as usual, and without very much inconvenience up to three years ago, when I consulted Dr. S., who examined me and told me to wear a sponge, so as to press my womb up, and it answered pretty well, but it troubled me very much, and after a while I neglected it. I have been for the last five years about as I am now. I have much trouble while passing water. I have to go down on my hands and knees to succeed."

Upon examination, there was found to be a complete prolapse of the womb to such a degree that the anterior wall of the vagina, while the patient was standing, was quite outside the vulva; the mucous membrane, altered as to its surface, being skin-like and having fine hairs upon it, and also having for its posterior surface, connective tissue being apparently wanting, the posterior wall of the urinary bladder, the mouth of the womb presenting on the back side of this pouch-like protrusion. The posterior wall also of the vagina had drawn down the rectum to a degree and condition similar to that of the front.

Treatment of the prolapse had not been of much avail up to about the first of November, when symptoms pointing to disease of other organs were manifested, and as they seemed not to be dependent upon nor connected with the prolapsus, consideration for it was held in abeyance. About this time the patient began to suffer pain in the hepatic region, and on the 7th of November, while at stool, which was brought about by artificial means, she had some kind of a paroxysm, which was not well described, one feature of which, however, was that of unmistakable pain in the abdomen. As soon as an examination could be made it was found that the anterior edge of the liver could be

felt at, and for a finger's breadth below, the border of the ribs, and rounded, seemingly. During the remainder of the month pain in the region of the liver was constant, with occasional fever lasting a few hours, the bowels never acting except under the influence of laxatives; the pulse generally about 70, compressible and moderately full; temperature never over 100° F., oftentimes 98° and less; skin fair, intellect clear; nourishment for the most part tasted good; undue thirst occasionally; urine passed every twelve hours. The treatment was by opiates, laxatives, and local applications.

On the 6th of December she had an exceptionally good day, so that she was up and about and putting her room to rights. The course and treatment were pretty much the same as above related, except that the liver seemed to extend lower daily, little by little, so that by the 19th it was three fingers' breadth below the edge of the ribs. From the 6th to the 19th there was gradual failure of strength, and on the 11th, 12th, 13th, 14th, there was profuse sweating.

Early on the morning of the 20th she had a severe paroxysm of fainting or sinking, or a chill, or a mixture of all three; the description of it was not clear. Two or three hours after this Dr. Ingalls found her with the marked symptoms of peritonitis: the knees drawn up, decubitus dorsal, countenance expressive of pain and anxiety, pulse 120 and small, abdomen full, round, tense, and tympanitic; the thirst could not be assuaged. On the 21st a round and rather hard and immovable mass or tumor was detected, which seemed to be projected from the inferior surface, or from the anterior edge of the liver, and this increased in size and extent daily, so that by the 27th it reached nearly as low as the umbilicus, and filled the right hypochondrium. Pain persisted over the normal region of the liver. From the 21st to January 1, 1878, on which day she died, there was constant regurgitation of whatever was swallowed, and during these days there was but one discharge of feces, which was brought about by a copious injection, previous injections coming away hardly discolored.

*Autopsy.* At the autopsy, which was performed by Dr. E. G. Cutler, the following condition of the organs was found: The heart was not abnormal. There were one or two small atheromatous patches in the ascending and transverse portions of the aorta. The lungs were both adherent to the costal pleura at the apices over a small area. In the apex of each there were one or two old caseous nodules of small size (one in the right lung contained a small deposit of lime salts), surrounded by condensed lung and connective tissue. The right lung extended down only to a level with the third rib. The posterior portions of each lung were much congested and œdematous.

On opening the abdomen, a large, irregularly oval, whitish-gray new growth was seen beneath the peritonæum, in the lower epigastric and right hypochondriac regions and the upper part of the right lumbar and umbilical regions. The mass had invaded the right lobe of the liver, had infiltrated the peritonæum, and produced adhesions to the abdominal wall over it, covering a space as large as the palm of the hand. The gall-bladder was completely buried in the mass, the head of the pancreas involved, and also the angle of junction of the ascending and transverse portions of the colon. The chief part of the mass

was deep, and seemed to have lifted the liver, colon, pyloric end of stomach and duodenum towards the surface by an increase in size. On making a section into it, it was found to be very soft and friable, and to contain a clot of blood in the centre nearly as large as the two fists; in many places the growth was very yellow-colored and fatty. The pyloric end of the stomach and the duodenum were pressed upon and flattened out by the diseased mass, so that the finger could not readily be passed through them; they were not diseased; the head of the pancreas was, however, infiltrated, and the colon in the place mentioned above was also infiltrated from behind through the muscular layer to the mucous coat, and the canal was diminished in diameter.

The hepatic and cystic ducts of the liver, both pervious, were transformed into tubes of the new growth; the gall-bladder was also diseased, and contained a large gall-stone. Microscopically the tissue was composed of large, round, spindle and stellate cells, not imbedded in a stroma. The spindle cells predominated. There were small secondary deposits in the mesentery and omentum. The peritonæum was not inflamed. The spleen was atrophied, but of good consistence and color. The kidneys were small, and the epithelium of the cortical portion cloudy. The uterus was about three inches long, had very thin walls just above the internal os, and was about as consistent as a wet rag. Brain and spinal cord not examined.

*Cancer of Liver, Kidney, and Spine.* — DR. STEVENS reported the following case. On September 16, 1877, he was consulted by Mrs. A., who gave the following history: She was an American, aged sixty-five, married, and had never borne children. Ten years before had pneumonia, and six years later pleurisy; otherwise always healthy. Father lived to be eighty-four years of age, mother ninety-one. Had lost two sisters, one dying at fifty-four from cancer of the breast, the other at forty-nine from "cancer in the bowels." In the case of every member of the family (eight in number) the hair has turned perfectly white before the age of thirty-five, and at about the same age they have developed a trembling of the hands and head. This was very marked in the mother.

August 13, 1877, when attempting to get out of bed in the morning, she felt a sudden pain in the lower part of the back, which was severe and prevented her from standing. The pain passed off during the forenoon, leaving behind a lameness and soreness, most noticed in sitting down and getting up from a chair. This did not change much for a week, during which time she was about and able to attend to household cares. One week after the first attack she had a second, which was more severe, obliging her to keep in bed for two days, after which she was able to be up and about the house, suffering but little pain. Pain was increased in attempting to get up from a sitting posture, but when in the erect position she could walk with but little trouble.

For three weeks her condition was about the same. She went out-of-doors almost every day, some days taking quite long walks. Was most comfortable when lying on her back with her knees drawn up, and could not lie on either side without increasing the pain. Appetite was not quite so good, and strength was somewhat impaired. Bowels were constipated; there was no trouble in passing urine, and no pain except in the back.

When first seen the following condition was noted : very thin, countenance bright, skin clear, muscles of the back in a state of continuous contraction, somewhat tender on pressure. No tenderness over spinous processes. In standing position nothing abnormal noticed about curves of spinal column. Pulse and temperature normal.

Was next seen October 4th at her house. She was dressed and lying on a lounge. Had more difficulty in walking; could sit down and get up without help, "but had to move just so or got a stitch in her back." Stood erect when walking. Nothing abnormal found in rectum or vagina. Pulse 80; temperature 99°.

From October 4th to 10th but little change in her condition. Sat up most of the time, and had but little pain if quiet.

October 16th. Had more trouble in moving. From 16th to 24th very little change. On the 24th, in bed. Thought she had been made worse by being on her feet so much, superintending preparations to move. Tenderness of muscles of the back about the same as when first seen. No tenderness or increased pain on percussion of the spine.

October 29th. On attempting to get out of bed fell to the floor; after being helped back to bed felt faint, and had severe pain in the back, shooting down the legs, any movement of the body causing great suffering. Pulse 100; temperature 100°. The next day was more comfortable; in pain only when attempting to move.

October 31st. Moved from one side of the bed to the other with but little pain.

November 1st. Walked into another room with the help of her husband.

November 3d. Rode half a mile in a hack (family moving), and felt none the worse for it. From this time till November 24th was comparatively free from pain, and sat up every day.

On the morning of the 24th, on attempting to get out of bed, had another fall. The pain was more severe than at any time before, and she complained of being chilly. Pulse 112; temperature 101°.

November 25th. Had nausea, with vomiting; pain continued severe, was much increased by motion; passed urine frequently and without difficulty. Examination of urine made at this time showed nothing abnormal except a little bile pigment and a few pus corpuscles.

November 27th. Had cutting pain in right hypochondriac region extending to epigastrium; tender on pressure. Lower border of the liver two inches below the ribs. Superficial veins of abdomen very prominent; but little pain in the back or legs. Pulse 120; temperature 101°. There was no marked change up to December 1st, on which date was more free from pain. Lower border of liver easily made out three inches below ribs; surface smooth, very tender on pressure. Vomiting continued. Countenance much changed; skin becoming of a pale-yellow color; conjunctiva clear.

From this time she continued to fail quite rapidly; when raised up to use bed-pan would say that her back was broken. She became very much emaciated, had a marked cachectic look, and died January 2, 1878, about three and a half months from beginning of symptoms.

*Autopsy*, eighteen hours after death. Head not examined. Heart and lungs healthy. Stomach and intestines showed no evidence of disease. Spleen small; otherwise healthy. The genito-urinary organs showed nothing abnormal. The liver, left kidney, and vertebræ showed extensive disease, and were sent to Dr. Fitz for examination.

A few days before death the patient confessed that for over twenty years she had been in the habit of using morphine; for the past five years the amount used had been two and a half drachms a week. This probably accounts in a measure for the absence of pain in the last weeks of life.

DR. FITZ showed the specimens referred to above, saying that probably the kidney was primarily affected, as but one kidney was involved, and the disease was uniformly diffused throughout a portion of that organ, showing itself as an infiltration of grayish material, in which pyramids and cortex were sharply differentiated, and the Malpighian bodies could often be seen with the aid of the microscope. The tissues immediately surrounding the kidney were apparently free from disease.

The liver was moderately enlarged, and its surface was studded with gray cancerous nodules, the largest of the size of walnuts. Similar appearances were found within the organ. A series of cancerous nodules, the largest about the size of a filbert, were found in the bodies of the lower dorsal and lumbar vertebræ, the bone structure being entirely obliterated in the parts affected. The body of the first lumbar vertebra had almost wholly disappeared, the adjoining intervertebral cartilages, dotted with adherent fragments of bone, and united by a few fibrous shreds, being in close contact. The structure of the new growth in the various organs was composed of a fibrous stroma of varying thickness, inclosing alveolar spaces, in which were numerous large, irregularly shaped cells, without evident intercellular substance.

JANUARY 21, 1878. *Plastic Surgery*.—DR. PORTER read a paper upon Cases of Plastic Surgery, with exhibition of patients and photographs.<sup>1</sup>

DR. INGALLS asked the reader if the operations were performed under the use of carbolic spray.

DR. PORTER said they were not, but that in the later cases he had used a dressing of carbolized water, which was applied hot, and kept so as long as there was danger of sloughing. In some instances cotton batting was applied over this dressing. In cases where no sloughing took place this dressing answered perfectly well.

*Aneurism of the Aorta*.—DR. KNIGHT reported the following case: The patient was a gentleman, thirty-one years of age, a surgeon in the navy, who had always enjoyed good health till his last illness, with the exception of what was considered muscular rheumatism after exposure to severe cold in China several years ago. In the summer of 1876, while in South America, after an attack of diarrhœa, he had "cold" with slight cough, pain in the left chest, and some dyspnœa. During the autumn the dyspnœa increased, and at one time he was said to have had "pneumonia of both lungs;" at another time he was said to have "pericarditis." The pain continued, and the dyspnœa became

<sup>1</sup> The cases were published in the JOURNAL, April 4, 1878.

worse. In November, 1876, he began to have some dysphagia. The pain, dyspnoea, and dysphagia continued, and he came home in the summer of 1877. On the voyage he had severe angina pectoris, and once there was partial paralysis of the left arm. There had been no palpitation up to this time, but there were very distressing eructations and pain between the shoulders. After his return in August he kept very quiet, most of the time in the recumbent position, and took very large doses of iodide of potassium (at one time one hundred and sixty grains a day). Pain in the spine and in the cardiac region was very intense, and later there were very exhausting palpitations. During the last six weeks of life he felt as if being strangled. The dysphagia was variable, and not very great until the last few days of his life. The last day he declined to take even liquid food on account of the distress produced by swallowing, which he also felt with every respiration. There was much emaciation, though he had taken sufficient food up to the last few days.

On the 13th of January he had two attacks of severe dyspnoea. Dr. Knight saw him after each had lost its severity; breathing, however, was then constantly difficult, and expiration was prolonged and audible at a distance. He said his suffering was indescribable, especially in anticipation of the exacerbations of dyspnoea. Dr. Knight promised to give him chloroform when another attack came, which occurred at about nine and a half P. M. The chloroform was continued by Dr. Knight, and afterwards by Dr. Van Slyck, of Brookline, at intervals until six A. M., the patient being in a semi-comatose condition, but when aroused showing so much suffering that the chloroform was renewed. From six till eleven A. M. he remained comatose, and died at the latter hour.

Dr. Knight's first physical examination was made August 14, 1877. The record was as follows: "Second rib (left) more prominent, near sternum (normal?). No dullness in region of heart or great vessels. No visible pulsation except a little just below ensiform cartilage. Impulse of apex not to be felt. First sound loudest in fifth intercostal space within mammary line. Sounds of heart regular and normal in character; no souffle anywhere. Respiratory murmur much weaker everywhere in left chest than in right; a stridor usually heard louder at top of left chest near sternum, which seems to give way, causing freer respiratory murmur. Radial pulses and pupils equal.

"Considering the angina, the dysphagia now constant, the signs of pressure on the left primary bronchus, and the pain referred to upper dorsal vertebrae I should strongly suspect aneurism of the thoracic aorta, posterior part of arch and descending portion."

There was never much change in the physical signs except the development of a soft systolic murmur in the pulmonary area, and an increase in the stridor in the left chest, heard especially with expiration. Dr. Knight said with reference to the symptoms that the dyspnoea seemed fairly attributable in the beginning to pressure on the left primary bronchus; afterwards, perhaps, to some pressure on the trachea also. The spasmodic exacerbation may have been due to spasm of the trachea referred to by some authors in such cases. There did not seem to be any spasm of the larynx.

The dysphagia, being variable at first, seemed perhaps better attributable to irritation of the pneumogastric, and later to direct pressure of the tumor on

the œsophagus. The eructations which were so painful to the patient have been referred to by Atlee in the *American Journal*, July, 1869, as a valuable sign of thoracic aneurism, the symptom being produced, of course, by pressure on pneumogastric fibres. In a case which Atlee reports, in which this was the only symptom, and in which no diagnosis was made, a small aneurism was found just in the seat of that in the present case. The excruciating pain between the shoulders which occurred during the last months was naturally referred to probable erosion of the spine.

The temporary partial loss of power in the arm, as the autopsy showed, could not have been from pressure on the brachial plexus, and as Dr. J. J. Putnam suggests may have been that partial paralysis which we sometimes see arise apparently from severe pain. The emaciation suggested possible pressure on the thoracic duct, which crosses from right to left in the suspected region.

There were no symptoms of rupture. After the relaxation of spasm by chloroform, there was no appearance of cyanosis (which was not marked before), and the patient seemed at last to die by asthenia.

*Autopsy.* The autopsy made by Dr. Sabine twenty-four hours after death gave the following results: Body rather emaciated. Rigor mortis well marked. Upon superficial inspection of thoracic viscera, after removal of sternum, nothing abnormal could be discovered. Heart was found relaxed and flabby, both sides being moderately filled with fluid blood and soft coagula. On both the anterior and posterior surfaces were patches of thickened pericardium, due to chronic inflammation. The left ventricle was slightly dilated, as was also the mitral valve, through which three fingers could be readily thrust. The lungs were perfectly healthy with the exception of very slight old pleuritic adhesions at apex of right lung, and slight catarrh of the larger bronchi.

After the lungs were removed an aneurismal dilatation of the descending portion of the arch of the aorta was found. The aneurism was about half the size of one's fist, sacculated, possessing very thin walls, and involved about three fourths of the circumference of the vessel, the left side being intact. It was adherent to the bodies of the fourth, fifth, sixth, and seventh dorsal vertebrae, the body of the sixth being eroded to the depth of half an inch, and that of the seventh slightly at its upper extremity. Both the left primary bronchus and the œsophagus were so pressed upon as to diminish their calibre at least one half, and an ulceration existed in the latter, at the point of greatest pressure, which extended very nearly into the sac. The left pneumogastric nerve lay between the aneurism and the compressed portion of the bronchus. Unfortunately the thoracic duct was not examined.

The inner surface of the whole thoracic aorta was studded with small elevated white patches due to commencing atheromatous process. All the abdominal viscera were found to be healthy. Head not examined.

*Malignant Disease of the Lung.* — DR. BOWDITCH mentioned the following case as illustrating how closely the symptoms were allied to those in the case reported by Dr. Knight. A broker consulted him on account of a continued coldness of the right arm, some obscure trouble about the chest, and pain in the back. There was diminished respiration near the root of the right

lung, but no abnormal physical signs about the heart. The patient consulted different physicians, but returned to Dr. Bowditch a year later with all his symptoms increased in severity. There was also partial paralysis of the right arm, which soon became complete. After months more of suffering, with similar symptoms, paraplegia ensued. From the absence of cardiac or aortic physical signs, the gradual lessening of the respiratory murmur in the right lung, and the general course and nature of the symptoms, Dr. Bowditch thought it probable that a malignant disease gradually extending had encroached upon the spinal marrow and the pulmonary structure. Dr. Brown-Séquard saw the patient at the time of the paraplegia. He did not suggest aneurism, and was inclined not to agree to the idea of malignant disease, but thought rather that a "cold abscess" had been gradually forming, and had finally broken through into the spinal canal. At the autopsy a cancerous mass was found involving a portion of the lung, and by a nodule of scirrhous hardness indenting the spinal column without apparently causing a real disease of it. The tumor was situated almost identically in the same relation to parts as the aneurism in the case reported by Dr. Knight.

*Extra-Uterine Fætation.* — DR. MARION reported the following case. Mrs. W. P. G., thirty-three and a half years of age, wife of a physician. Had one child about seventeen years of age. Had two abortions in the early months of gestation. Until within a few years had suffered a good deal from chronic endometritis, with at times profuse purulent discharge, accompanied by intense pain. She was under the care of Dr. Hunt, of Newtonville, then of Waltham. Within the last six years the husband frequently spoke to Dr. Marion of her suffering from one of her old attacks of pain, extending from the region of the right ovary to the uterus, remarking at the time how nearly impossible it was to make an examination of the bowels even, because of the extreme tenderness of the pelvic organs. She was subject to frequent attacks of neuralgia.

Her catamenia last appeared about the 29th of October, lasting three or four days. December 12th, forty days after the cessation of the catamenial flow, she complained of slight pain in the right side, which continued through the day. The following morning (December 13th) the pain came on again; as it was much more severe, she took an eighth of a grain of morphia, and remained in bed. From the 13th to the 17th inclusive she remained in bed, suffering little, unless she attempted to sit up. On the evening of the 17th, while taking her tea, she was seized with the most intense pain in the right side. At this time Dr. Marion first saw the patient professionally, and learned the above facts from her husband.

She lay on her back, knees drawn up, suffering intense pain, such as she had never before experienced. She said it seemed as if there were something running in her side. The pain was constant, with exacerbations. For the previous week she said she had had some nausea, and as she had passed her period she had thought of pregnancy, though she could not believe it possible, as she had often before been irregular. Examination of the abdomen was negative, except that it was extremely tender to the touch. Her husband made an examination per vaginam, and reported the uterus to be enlarged and ex-

tremely sensitive; so painful was it that a thorough examination was impracticable. The uterus, when the pain was severest, would almost rest on the perineum. After taking one and one half grains of morphia in divided doses, with hot fomentations, and then leeches applied to the abdomen, she began to grow easier towards morning. On the 18th and 19th she remained about the same; pain less severe, though suffering a good deal all the time. On the 19th Dr. Marion made an examination per vaginam. Uterus enlarged and very tender to the touch, anteverted, opened so as to admit the first joint of the index finger. Bimanual examination was impracticable, on account of the pain it caused. On the morning of the 20th she said she felt much better, though her pulse had increased in frequency; from 80 to 90, it had increased to 120.

On the evening of the 20th the severe pain came on again, accompanied by terrible faintness. Dr. Minot was sent for. He confirmed what has already been stated concerning the uterus, and found the hypogastric region slightly dull on percussion. Respiration abdominal. Bowels but moderately distended. Pulse ranging from 130 to 150, wiry, and without volume. Temperature normal, as it had been from the first of her illness. On the 21st Dr. Hunt, of Newtonville, was asked to be present with Drs. Minot and Marion. Condition of the patient not materially changed. Dr. Hunt thought he had previously seen her look as badly, excepting the pulse, from the effects of morphia or ether; he stated that more than once he had been frightened by the alarming symptoms produced on her by narcotics. He hoped the attack might be similar to what she had before had. The probability of pregnancy and the possibility of its being extra-uterine were urged in this conference.

Patient remained about the same through the day and night, taking stimulants and nourishment tolerably well. Dr. Marion remained with her most of Friday night, and from midnight to four A. M. of Saturday. She slept some, was able to turn in bed with but little assistance; pulse at times came down to 120, and she said she felt better. At six A. M. she had another attack of pain, and was very faint. During the day much of what she took into her stomach was regurgitated. Bowels very tympanitic. Pulse 150 to 160. She died quietly at 6.40 in the afternoon, being conscious up to within two hours of her death. Her temperature was never above normal; two or three times she complained of being chilly, but never had a distinct rigor. She desired to be fanned constantly and vigorously.

*Autopsy.* Dr. FITZ stated that death was the result of hæmorrhage, some two quarts of liquid and clotted blood being found in the abdominal and pelvic cavities. The uterus was enlarged symmetrically, and measured externally four and a half inches in length, and three inches from the insertion of one Fallopian tube to that of the other. Its outer surface showed several old adhesions and fibrous patches. The walls were thickened, and contained numerous dilated veins. The lining membrane of the uterus was red and soft, about one fourth of an inch in thickness, the surface relatively smooth and glistening though somewhat lobulated, and was dotted with numerous points, evidently glandular orifices. The attachment of this membrane ceased abruptly at the os internum, although it was continued into the cervical canal as a tongue-shaped

projection nearly one half inch in length. A probe readily passed from the uterine cavity through this projection. The thickened membrane did not extend into the Fallopian tubes.

About three fourths of an inch from the fimbriated extremity of the right Fallopian tube, and intimately connected with the latter, was a cyst somewhat larger than an English walnut, lying between the peritoneal layers of the broad ligament, and projecting into the recto-uterine fossa. The wall of the cyst was formed by a double layer of membrane, between which was a firm clot of blood. In the interior of the cyst was a fetus two thirds of an inch in length. The peritoneal covering of the cyst was perforated, and several delicate recent adhesions were seen upon the surface. There was no evident constriction of the Fallopian tube, and its canal was unobstructed from the foetal sac to the uterus. The right ovary contained a corpus luteum of the size of a large pea.

*Rupture of Left Ventricle.* — Dr. J. T. G. NICHOLS reported the following case of rupture of the left ventricle in two places, both connecting with one external opening. Female, sixty-six years old. Father and sister died suddenly of supposed "heart disease." She had never had symptoms referred to the heart. At ten A. M., soon after going up two flights of stairs rather hastily, she was seized with severe pain referred to the middle of the sternum. This pain in a few hours shifted to the epigastrium, and later was described as a sense of constriction at the latter point. When seen, an hour after the attack, she was very pale, with an anxious expression; breathing natural; pulse feeble, 60 to 70; heart sounds very weak, but distinct, and without murmur. The face and arms were cold and clammy, the lower extremities warm. No cyanosis. At noon she vomited, and had a discharge from the bowels. The arms became warmer as the day advanced; at 9.30 P. M., after vomiting, she died very suddenly. The pericardium contained bloody serum and a coffee-cup full of dark coagula.

*Heart Clot.* — Dr. HAMILTON, of the United States Marine Hospital service, presented a popliteal artery and vein taken from a patient who had died on the sixth day after an amputation at the knee-joint, the ligature upon the artery having remained intact until removal. The post-mortem examination revealed that death resulted from closure of the tricuspid valve by a large fibrinous clot in the right auricle; the other organs of the body and the stump presented a healthy appearance.

The specimens were interesting: one as showing the thrombus in an artery the sixth day after ligation; the other as showing that pus from the flaps had traveled along the vein for a distance of about three inches, thus demonstrating the propriety of the ligation of veins in amputations to prevent the entrance of pus into the general circulation.

DUHRING'S ATLAS OF SKIN DISEASES.<sup>1</sup>

PART III. of this admirable work is now ready for distribution. Extraordinary care has been taken, as we know, by its author to insure not only excellence in the artistic quality of the work, but also that each plate shall be delivered to the public in a perfect condition; and this has been accomplished by his personal scrutiny at every stage of the process. Few can truly appreciate the labor and expense bestowed by Dr. Duhring upon this publication; but the profession should express its encouragement of such work by a wide subscription. It is improbable that opportunity for obtaining such faithful illustrations of skin diseases will soon occur again.

We cannot add much to what we have already expressed in our notice of previous parts<sup>2</sup> concerning the scientific character of the Atlas. In the present part the drawing is as good, the coloring even better, we think, than before. The cases, eczema (squamosum), syphiloderma (erythematosum), purpura (simplex), and syphiloderma (papulosum et pustulosum), are most judiciously selected, and the descriptive text, we need hardly say, is excellent. The whole is highly creditable to the author and to American dermatology.

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ERICHSEN'S SURGERY.<sup>1</sup>

SINCE the appearance of the previous edition of this book, the visit of its distinguished author to this country and his favorable reception have increased the interest felt by our countrymen in a surgeon of such high standing and a writer, so modest and industrious, of a work second to none of its kind in the English language. It is but five years since we received a new and revised edition with numerous alterations, and yet in the present one we find a great many additions in nearly every department. One hundred and fifty illustrations have been added. These are pretty evenly distributed over the book, but we notice that special attention has been given to surgical pathology, and an attempt has been made to meet the requirements of the modern student in a branch of surgical science as to which most text-books still maintain an almost mediæval attitude. Mr. Erichsen has manfully attacked this and many other subjects with an industry which we could hardly expect from a man who had already gained so many laurels. The consequence is that the present edition is more nearly "up to the times" than any other surgical work we are familiar with. There are many faults, and such as are not remedied by the changes usually thought necessary in new editions, but these are common to all surgical text-books. We should prefer to see a tendency towards an

<sup>1</sup> *Atlas of Skin Diseases*. Part III. By LOUIS A. DUHRING, M. D., Professor of Skin Diseases in the Hospital of the University of Pennsylvania; Physician to the Dispensary for Skin Diseases, Philadelphia, etc. Philadelphia: J. B. Lippincott & Co. 1878.

<sup>2</sup> See *Journal*, July 13, 1876, and June 7, 1877.

<sup>3</sup> *The Science and Art of Surgery*. Being a Treatise on Surgical Injuries, Diseases, and Operations. By JOHN ERICHSEN, F. R. S., F. R. C. S. Revised by the author from the seventh and enlarged English edition. Philadelphia: Henry C. Lea.

entirely new system of compiling works on surgery, many special branches being omitted entirely, illustrations employed chiefly as diagrams, no attempt made to represent delicate morbid changes by the usual rough wood-cuts, sensational illustrations abandoned, and many of the faults of the previous generations of writers discarded; but it would be ungracious to select so favorable a specimen of the surgical literature of to-day for these criticisms, and we can therefore close our remarks with a hearty commendation of the book to students and practitioners as being the very best they can buy.

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### THE NATIONAL QUARANTINE.

On the 27th of March, 1878, Hon. W. H. Felton, of Georgia, chairman of the committee on commerce, reported back the house bill, "*To prevent the introduction of contagious or infectious diseases into the United States,*" which bill, after a short discussion, was amended and passed. On the 18th of April, the bill, having been favorably reported by the senate committee on commerce, was hastily taken up out of its regular order, on motion of Senator Gordon, and passed.

This bill provides in section 2 that when any vessel clears for the United States out of any foreign port, where any contagious disease is prevailing, the United States consular officer at that port shall immediately inform the supervising surgeon-general of the Marine Hospital service of the fact, together with the port of destination of the vessel; and such officers are further required to make weekly reports of the sanitary condition of the ports where they are stationed to the supervising surgeon-general of the Marine Hospital service.

Section 3 provides that the medical officers of the Marine Hospital service and custom officers shall aid in the enforcement of the regulations to be hereafter adopted by the surgeon-general.

Section 4 provides that the supervising surgeon-general shall transmit weekly abstracts of the consular reports above mentioned to the medical officers of the Marine Hospital service, the collectors of customs, and the state and municipal health authorities in the United States.

Section 5 provides that where a local quarantine already exists, the officers thereof, on the application of the state or municipal authorities, shall be considered as United States officers for quarantine purposes, but shall receive no pay for such service.

It is noticeable that those most urgent in hurrying the passage of this bill were from the Southern States, where quarantine is least efficient; but that nevertheless great care was taken to prevent encroachment on the states rights doctrine by the expedient of making government officers out of the local authorities, albeit in a Pickwickian sense.

The necessity of a measure of this kind has long been recognized. The house committee on commerce as long ago as April 2, 1844, reported favorably upon a bill for the establishment of a marine hospital at Key West, Fla., and recommended that it be used as a quarantine. Accompanying this report

was a presentment of the grand jury of the city of Key West, soliciting aid from the general government on account of cases of yellow fever among the sailors treated by the city.

We deem it unnecessary to cite the history of the many epidemics of yellow fever that have prevailed upon our Southern sea-board, the gulf coast, and the cities and villages along our Southern rivers, nor to that of the disastrous cholera epidemic of 1873, to convince our readers that at the Southern sea-board, at least, something more powerful than local laws, and more wide-spreading in its operation, is necessary promptly to prevent a repetition of these distressing calamities.

The bill now passed embodies most of the suggestions of Surgeon-General Woodworth to the Public Health Association in 1873, and promises to make the Marine Hospital service a "life-saving service," to which the country may look for assistance in attaining "that pronounced end and aim of all sanitary science, the prevention of disease, and the protection and preservation of the public health."

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#### MEDICAL NOTES.

— Rapid lithotripsy with evacuation has already had a trial in New York. At a meeting of the New York Pathological Society, held March 27th, Dr. Keyes showed a specimen of stone removed by Dr. Bigelow's method. The patient was sixty-three years of age. The first crushing lasted twenty minutes, and on washing out the bladder ninety-four grains were obtained, the second crushing yielded twenty-nine grains, the whole operation not occupying an hour.

— By reference to the notice of the Boston Board of Health which is advertised in the JOURNAL, it will be seen that all physicians are required to report every case of diphtheria. A notice of one case in a family does not exempt a physician from reporting any subsequent cases that may occur in the same family. A misunderstanding of the order by many physicians has caused the board again to call attention to their order relating to the reporting of such cases.

— By a recent act of the legislature, which went into effect May 1st, physicians in Massachusetts are required, as will be seen by reference to the law published elsewhere in the JOURNAL, to sign only one death certificate. Hereafter the proper returns are first submitted to the Board of Health for their approval, and, after being stamped "approved" there, must be carried to the registrar's office, who alone has the right to issue a permit for burial.

— A new quarterly journal devoted to neurology is about to appear in England. It is called *Brain*, and is edited by Drs. Bucknill, Crichton-Browne, Ferrier, and Hughlings Jackson. It will give articles treating of the anatomy, physiology, and therapeutics of the nervous system. Messrs. Macmillan & Co. are the publishers.

— The *British Medical Journal* mentions the case of a man who, while lifting, felt something give way, and died in a few minutes. The necropsy revealed a small aneurism about the size of a pea at the left of the aorta, half an inch behind and to the left of the coronary artery. The opening was no larger than a pin's head.

— Dr. Weil, of Munich, reports success in the replantation of teeth which he had extracted in order to cleanse the nerve canal and remove the effects of disease. Restrictions upon the use of the reinserted teeth were removed at the end of three weeks.

— Dr. J. R. Mayer, of Heilbronn, is dead. He was famous as the propounder of the mechanical theory of heat.

— Cobbold, the eminent helminthologist, has demonstrated, by dissections of the mosquito, that from the blood of human beings it sucks filariae, deposits them in cisterns, wells, etc., and that these entozoa are received into the bodies of those who drink such water.

— The tercentennial anniversary of Harvey's birth has revived the discussion as to the true nature of his connection with the discovery of the circulation of the blood. In the *Medical Press and Circular* for April 3d it will be seen that Huxley and the editors take different views. In the *Gentleman's Magazine* for April will be found a charming lecture, by Dr. B. W. Richardson, on Harvey during three stages of his life. Richardson fairly disposes of the various attempts to deprive Harvey of his claim to the name of "discoverer" of the circulation.

— The mortality from whooping-cough in London during the first week of April was greater than in any previous week for thirty-nine years. The number of deaths was one hundred and fifty-eight.

— A Vienna letter to the same journal (April 4th) contains the following extraordinary passages: "Marion Sims has just left Vienna, having received from the medical world here ovations as perfect as General Grant has from Europe at large. At a grand banquet given in his honor, he remarked in the course of a *several hours' speech in English* [italics not ours] that he had as yet met with no such reception, a remark which may suggest several ideas to a thoughtful mind."

— It is proposed to erect a statue to the memory of Harvey at Folkestone, where he was born in 1578. To this end £1100 have already been raised, £1800 being the amount required.

— The regular medical societies of Philadelphia are endeavoring to obtain the passage of a law providing that "no person duly authorized to practice physic or surgery shall be allowed or compelled to disclose any information which he may have acquired in attending any patient in his professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon."

— Dr. Hamilton, of New York, finds that Dr. Dwight, of Brooklyn, is correct in his assertion that in a large proportion of persons the lower limbs are of unequal length. In his measurement, Dr. Hamilton found where the legs differed in length that the left was usually the longer.

— In a few weeks a festival will be held in Liège to celebrate the fortieth year of the professorship of Theodore Schwann, the author of the cell theory. The founder of modern histology is still living and actually professor of physiology in the Belgian University. The *Lancet* states that "all Englishmen of science who have specially occupied themselves in the field opened by Schwann are begged to address Prof. Ed. Van Benedin, Liège, and inclose their photographs for insertion in an album to be presented to Professor Schwann."

— At a recent meeting of the Pathological Society of Brussels, M. Wehenkel showed a new and improved test for the so-called amyloid degeneration. It is aniline violet. On treating the suspected tissue with this color the points of amyloid matter rapidly assume the color of mahogany red.

— At the annual meeting of the medical staff of the St. John's Hospital, Lowell, Dr. John O. Green was chosen chairman, and Dr. Nathan Allen secretary. In his report for last year Dr. Allen gives an encouraging account of the usefulness of this hospital, and in considering the various forms of disease treated dwells upon the fact that a large number found their origin in intemperance.

— In a paper read before the Society of Arts, Sir Joseph Fayrer called attention to the necessity of an organized establishment in India for the purpose of more effectually preventing the great destruction of life from wild animals. The *Times and Gazette* in quoting from this paper gives the following astounding figures: In the year 1875 no less than 20,805 persons and 46,805 head of cattle perished from this cause. Of these 17,070 persons died from the bites of snakes, 1016 persons were killed by wolves, and 828 persons by tigers. Through the exertions of the government the death rate from disease has been reduced to less than one third of its former figure (69 to 18). In the matter of exterminating wild beasts, however, they have to meet with the difficulty in obtaining native coöperation, arising from superstitious motives.

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## BOSTON CITY HOSPITAL.

IN THE SERVICE OF DR. HALL CURTIS.

[REPORTED BY S. E. FITZ.]

*Case of Yellow Atrophy of the Liver.* — Mrs. E. T., widow, tailoress, sixty-five years, was born and lived in Boston, and was admitted to the hospital March 11, 1878. The history obtained was deficient because of her somewhat stupid, almost typhoid condition. She had always been a strong woman, of temperate habits and general good health; was at Taunton Asylum for Insane for some time previous to last December; and had been as well as usual during the winter and till about two weeks before, when exposure to bad weather was followed by general pains, especially severe in shoulders and neck, and also by considerable indisposition. She kept up, however, until vertigo, weakness, and finally chills compelled her to take to her bed four days before admission. She came in complaining of pain, not very severe, in the abdomen, most marked at the epigastrium; of pain in the back, from the lumbar region downward; of some pain before micturition; of constipation, thirst, anorexia, and nausea. The whole surface of the skin was icteric, dry, but not hot. The tongue was coated white, and inclined to be dry. Pulse 76; temperature 103.5° F. Liquid diet and a cathartic were given.

March 12th. Little sleep last night, because of abdominal pain and nausea. Vomited nearly everything taken, even milk and lime-water. One dejection to-day, not peculiar. Nothing abnormal detected in chest except feeble heart

sounds and tenderness at right base, which extended to right hypochondrium and epigastrium. A. M., pulse 80; temperature 99°. P. M., pulse 64; temperature 97.5°.

March 13th. Pupils much contracted, but sensitive. Increased icterus and nausea; vomitus, which before was curdy and light colored, now became a dark-brown fluid. Still considerable tenderness in hepatic region, with an indistinct feeling of resistance. Less pain. Made no complaint of anything. P. M., pulse 68; temperature 96.4°. Ordered pil. hydrarg., five grains, to be followed by a saline cathartic.

March 14th. The patient complained of pain during first part of night, but toward morning became quiet, and appeared to sleep. At morning visit decubitus was, as often before, on right side, skin more deeply yellow, face sunken, eyes rolled upward. She noticed nothing, appeared dull, sleepy, and, when aroused, mind wandered. The little nourishment taken was soon vomited with a greenish-brown, thick fluid. In the evening became unconscious, could not be aroused, and soon began to have clonic convulsions over whole body, with groaning expiration. There were seven or eight paroxysms up to midnight, when coma became complete, and so continued till death, four hours later.

The autopsy was made by Dr. W. P. Bolles, thirty hours after death. Body not emaciated, a brownish fluid oozing from nostrils. There was yellow discoloration of the entire body, showing itself in the skin, conjunctive, and fat of section. *Brain* normal. *Lungs* did not collapse much on opening the thorax. No adhesions. No serum in pleural cavities. Section of lungs gave numerous dark ecchymoses and considerable oedematous fluid. *Heart* normal, though there was much pericardial fat. *Stomach* partly filled with a somewhat viscid fluid, dark brown with a tinge of green, and consisting of mucus, blood, and probably bile. There was a slight constriction near the pyloric extremity (not the result of disease), and on the ridge thus formed, near the greater curvature, was an ulcer, one eighth to one sixth inch in diameter, extending through the mucous membrane only. *Intestines* normal. *Liver* was reduced in size, weighed one pound and fourteen ounces, was thin, flabby, easily broken through with the finger, readily folded on itself, and shriveled-looking on surface, which was slightly uneven. Its color was dull yellow mottled with darker spots. Its section was brownish-yellow in color, soft, flabby, the usual lobular structure being much obscured. The section was flecked also with dark ecchymotic spots, corresponding to those appearing on the external surface.

The *gall-bladder* was empty. A calculus one third inch long was lying loose in the hepatic duct. The *spleen* was normal, though rather soft. The *kidneys* were little altered in size. They were of a dark-reddish color, with evident yellowish tone pervading. No change of structure was visible to the naked eye.

Dr. R. H. Fitz kindly examined parts of the liver and kidneys. He says, "There can be no doubt of the nature of the liver, which under the microscope showed granular detritus, fat drops, leucine and tyrosine crystals, and no normal cells. The kidney was a superb specimen of acute parenchymatous nephritis, with universal fatty degeneration, such as might occur from arsenic or phosphorus."